L ~~~~~~   ~~~~~(~~)/~~.(m)/~/~~~(~),~~(~)   IJP(c)   JD

ACC NR: AT6001400   SOURCE CODE: UR/3180/64/009/000/0153/0158

AUTHOR: Andreyev, S. I.; Vanyukov, M. P. (Candidate of physico-mathematical sciences)

ORG: none

TITLE: Production of intense 10^{-7}—10^{-8} sec light flares by means of spark discharges

SOURCE: AN SSSR. Komissiya po nauchnoy fotografii i kinematografii. Uspekhi nauchnoy fotografii, v. 9, 1964. Vysokoskorostnaya fotografiya i kinematografiya (High-speed photography and cinematography), 153-158 and insert facing page 168

TOPIC TAGS: light source, electric discharge, gas discharge, argon, nitrogen, helium

ABSTRACT: Several researchers discussed recently the production of light flares shorter than 10^{-7} sec by means of spark discharges. However, the question concerning the maximum intensity of such flares was left open. The present paper reports on the studies of physical conditions which determine the relationship between the energy fed into the discharge gap and the duration and luminous intensity of the resulting flare. The authors discuss in a semi-empirical manner the process of liberation of electrical energy within the spark discharge channel, present diagrams showing the changes in time of electrical characteristics of spark discharges in air (in particular of the changes of the specific and total spark resistance within the channel), survey the methods for the shortening of the duration of the light flare and present experimental results (summarized in Fig. 1) for the cases of spark discharges in argon, nitrogen, and helium.

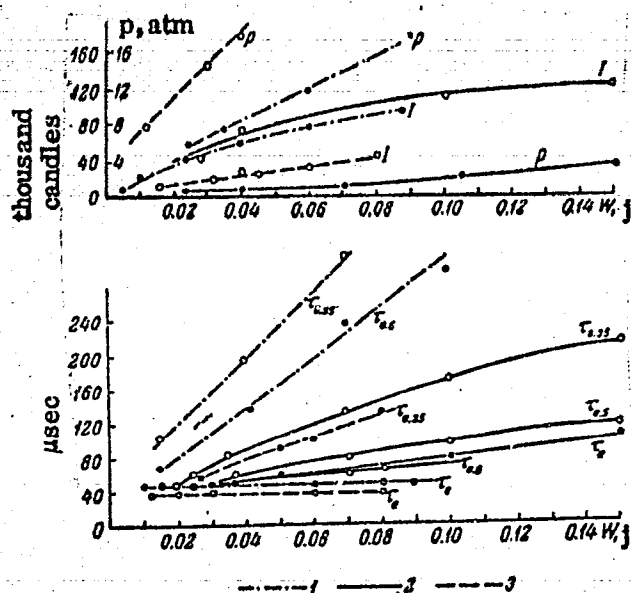Card   1/2

L 15282-66
ACC NR: AT6001400

Fig. 1   Electric pulse duration, light intensity amplitude, and light flare duration as a function of energy liberated in spark discharges generated in different gases.

τ_e - duration of the electric pulse at the 0.35 level of the maximum; $\tau_{0.35}$ and $\tau_{0.5}$ - duration of light pulses recorded respectively at the 0.35 and 0.5 level of the maximum; I - amplitude value of light intensity; P - gas pressure at which the discharge of energy W occurs. Discharge parameters: C = 900 pF, L = 7 nH, 1 = 1.5 mm.
1 - argon; 2 - nitrogen; 3 - helium.

SUB CODE: 20 / SUBM DATE: none / ORIG REF: 002 / OTH REF: 003

Card   2/2

ACCESSION

SOURCE: Ref. zh. Fizika, Abs. 6Zh58

AUTHORS: Vanyukov, M. P.; Isayenko, V. I.; Serebryakov, V. A.; Stepanov, B. I.

CITE

ation   of the laser generation power

dens.ty in the

$$u = a + bP(u - u)$$

ACCESSION NR: AR5017554

mirror was done, with a transmission coefficient T = 5%. The output mirror was

of the output mirror. Such parameters were: the lasing time, the time interval

AUTHOR: Vanyukov, M. P.; Isayenko, V I.; Serebryakov, V. A.   𝔅

TITLE: Experimental verification of the Stepanov formula for the yield of stimulated emission from a resonator

SOURCE: Optika i spektroskopiya, v. 17, no. 6, 1964, 954-956

TOPIC TAGS: laser emission, light yield, laser resonator, laser output analysis

ABSTRACT: A formula derived by B. I. Stepanov (DAN SSSR v. 148, 74, 1963) for the

ACCESSION NR: AP5000558

O

... a coulometer accurate to 10%. Each flash lasted 0.5 -- 1.0 msec and con-
sisted of ...

SUB CODE   OP, EC   NR REF SOV: 003   OTHER: ...

Card 2 2

TITLE: The use of electrically exploded wires to obtain ultrashort sparks

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 34, no. 10, 1964, 1871-1872

L.10803-65
ACCESSION NR: AP4046350

SUBMITTED: 27Jan64   ATD PRESS: 3117   ENCL: 00

SUB CODE: EC, EM   NO REF SOV: 003   OTHER: 001

Card 2/2

ACCESSION NO.   AP4031135   S/0056/64/046/004/1182/1187

AUTHOR: Vamyukov, M. P.; Isayenko, V. I.; Serebryakov, V. A.

TITLE: Time variation of the intensity of stimulated radiation in various lateral modes

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 4, 1964, 1182-1187

TOPIC TAGS: stimulated radiation, radiation intensity, radiation intensity variation, lateral radiation mode, radiation intensity time variation, axial radiation mode, lateral mode generation, axial mode generation, stimulated radiation, neodymium activated glass, activated glass, resonator, polarized radiation

ABSTRACT: Spatial and time relationships between the axial and some lateral modes of stimulated radiation were investigated by using an apparatus in which the emission from a neodymium glass (λ = 1.06 μ) is directed toward a lens in the focal plane of which is the photocathode of an image converter. The optical system with its auxiliary photographic system is shown in Fig. 1 of the Enclosure for a case

Card 1/ 2

ACCESSION NO.   AP4031135

wherein the emission leaving the glass specimen is separated into two beams. Fig. 2 shows the distribution of various oscillation modes. A comparison of the data obtained with determinations made by an analytical formula connecting the wave number of a vector with the linear-resonator dimensions shows that the theory of resonators does not explain all the data obtained. However, the importance of polarized radiation in the lateral modes is emphasized. Original art. has: 5 figures and 4 formulas.

ASSOCIATION: Gosudarstvennyy opticheskiy institut im. S. I. Vavilova (State Institute of Optics).

SUBMITTED: 31Aug61

SUB CODE: PH

DATE ACQ: 07May64

NO. REF. SOV: 002

ENCL: 02

OTHER: 003

Card 2/2

I 90991_6r   ...

ACCESSION N°:   AP5001819   5/0056/64/047/006/2019/2021

AUTHOR: Vanyukov, M. P.; Isayenko, V. I.; Serebryakov, V. A.

TITLE: Stimulated radiation connected with complex oscillation modes

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, ...

TOPIC TAGS: laser, laser crystal, laser oscillation mode, laser com-
p ex mode

ABSTRACT: Proceeding from earlier works by R. A. Laff, ... P. Dumar,
and others (IBM J. Res. and Develcpm. 7, 1963, 63) and of R. J. Collins
and J. A. Giordmaine (Proc. 3rd Intern. Congress on Quantum Electronics
Dunod, Paris, 1964, 1239), the authors continue their ... ...

modes having an angular ...

... in direction of ... optical transducer, ... photographs of the
... faces of samples ...

L 028 2-64
ACCESSION NR: AP0001917

made, and the geometry of a typical light path within the rectangular
specimen was analyzed in a drawing. The formation of

tute)

SUBMITTED: 16Jan64   ENCL: 00   SUB CODE: EC

NR REF SOV: 002

Card 2/2

L 51309-65   EEO(b)-2/EWG(F)/EEO(k)-2/EWA(h)/EWA(k)/EWP(k)/EWT(1)/EWP(m)/
PSD(t)/PSD/ASD/ESD
Pq-4/Pab   SCTB/IJP(c)   WG/WH

ACCESSION NR: AP5013854   UR/0368/65/002/004/0295/0298

AUTHOR: Varlamov, V.

emiss...

L 51309-65

ACCESSION NR: AP5013854

the pumping pulse in a rod 8 mm in diameter was accompanied by a
divergence angle of 1'; toward the end of generation, the angle reached
2'. A rod 2 cm in diameter increased the divergence angle from 40 to
80". Distortion due to the action of flash lamps upon the air in
this interferometer was found to be much larger than that occurring
directly in the laser rod. The air heating distortion, however, was
practically eliminated by ordinary glass shielding tubes inserted on
the ends of the rod. Orig. art. has: 4 figures.

Card 2/3

SUBMITTED: 21Sep54

L 1730-66   EWP(e)/EWT(m)/EPF(c)/EWP(i)/EWP(t)/EWP(b)   IJP(c)   JD/WH

ACCESSION NR: AP5016044   UR/0368/65/002/005/0415/0417
                                                     621.378.329

AUTHOR: Vanyukov, M. P.; Isayenko, V. I.; Luizova, L. A.; Shorokhov, O. A.

TITLE: Effect of resonator mirror alignment on generation conditions in neodymium-activated glass

SOURCE: Zhurnal prikladnoy spektroskopii, v. 2, no. 5, 1965, 415-417

TOPIC TAGS:. laser optics, neodymium laser, glass laser, mirror alignment

ABSTRACT: The effect of resonator mirror alignment on energy, emission threshold, angular distribution, end distribution, and coherence in specimens of neodymium-activated glass was investigated. Glass specimens 8,10, and 15 mm in diameter and 67–120 mm long were placed in the resonator with 90% reflective dielectric-coated mirrors set 1 m apart. The maximum energy output from the laser was 2-3 joules. It was found that misalignment of one of the external mirrors reduced the emitted energy, and increased the emission threshold while the pumping energy remained constant. For misalignment of less than 15", there was no change in angular distribution within the experimental error. At greater misalignment, the angular dis-

Card   1/2

L 1730-66

ACCESSION NR: AP5016044

tribution becomes asymmetric. Strong pumping produces even illumination over the entire end of a neodymium rod when alignment is perfect. When misalignment reaches 20-30", bands appear which coincide with the axis of rotation of the mirror. The interference pattern was not disturbed by misalignment, which indicates that coherence is preserved. Orig. art. has: 4 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 21Sep64   ENCL: 00   SUB CODE: EC, OP

NO REF SOV: 000   OTHER: 003

Card 2/2

L 1381-66   EWP(e)/EWT(m)/EWP(i)/EWP(t)/EWP(b)   IJP(c)   JD/JG/WH

ACCESSION NR: AP5021491

UR/0368/65/003/002/0171/0172
535.89

AUTHOR: Vanyukov, M. P.; Isayenko, V. I.; Lyubimov, V. V.

TITLE: Polarization of the stimulated radiation of neodymium-activated glass

SOURCE: Zhurnal prikladnoy spektroskopii, v. 3, no. 2, 1965, 171-172

TOPIC TAGS: light polarization, polarized light, polarization, stimulated radiation, resonator, laser, neodymium doped glass, glass, neodymium

ABSTRACT: The high losses caused by the polarizer can be avoided by using instead a glass plate whose angle to the axis of the instrument can be varied. The glass plate, which is placed between the neodymium glass rod and the output window, affects the efficiency of the resonator by determining the polarization plane of light oscillations. During experiments, the emerging beam was split by a half-transparent mirror, and the intensity of the two components was compared on a two-channel oscillograph. The measurements showed that if the glass plate is inclined at a small angle to the axis of the resonator, an almost complete polarization of the stimulated radiation can be obtained without involving great losses of energy. Orig. art. has: 2 figures.   [ZL]

Card 1/2

L 1381-66

ACCESSION NR: AP5021491

ASSOCIATION: none

SUBMITTED: 12Jan65

NO REF SOV: 001

ENCL: 00

OTHER: 001

SUB CODE: EM, OP

ATD PRESS: 4099

Card 2/2

L 26612-65   EWT(l)/EPA(w)-2/EEC(t)/EWA(m)-2   Pad-10

AUTHOR: Andreyev, S. I.; Vanyukov, M. P.; Daniel', Ye. V.

TITLE: Brightness of a spark discharge channel of nanosecond duration

SOURCE: Optika i spektroskopiya, v. 18, no. 2, 1965, 333-334

TOPIC TAGS: spark discharge, ultrashort discharge, ultrashort spark discharge, discharge channel, discharge channel brightness

charges and the electrical parameters of the discharge circuit was determined. For

ratio U_0/L is high. Brightness decreases because at hard discharges the release of energy in the channel   proportional to di/dt_H is not equal to the ratio U_0/L.

Card

where a and b are constants characterizing the gas in which the discharge occurs, K is a proportionality factor, ℓ is the length of the discharge gap, and $E_o = U_o/\ell$. For a discharge in air (a = 7 x 10^{-8} and b = 5 x 10^{-17}), when ℓ is expressed in cm, L in henrys, C in farads, E_o in v/cm, and B_v in stilbs, then at K = 4 x 10^{-5} the experimental data satisfy the equation for B_v values less than the limiting value and for those close to the limiting value. From this relation it follows that

Card 2/2

VANYUKOV, M.P.; ISAYENKO, V.I.; LUIZOVA, L.A.; SHOROKHOV, O.A.

Thermal distortions in samples of glass generating stimulated
radiation. Zhur. prikl. spekt. 2 no.4:295-298 Ap '65.
(MIRA 18:8)

VANYUKOV, M.P.; ISAYENKO, V.I.; LYUBIMOV, V.V.

Polarized stimulated radiation from glass activated by neodymium.
Zhur. prikl. spekt. 3 no.2 Ag '65.   (MIRA 18:12)

1. Submitted January 12, 1965.

VANYUKOV, M.P.

Book review. Opt. i spektr. 19 no.1:160 Jl '65.

(MIRA 18:8)

angle), so that the resultant curves are straight lines. An empirical formula

TITLE: Excitation of additional nonaxial modes of stimulated emission

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48,

ABSTRACT: Data are presented on the excitation of nonaxial radiation

nomogeneities of the specimens,

Card 1/2

L 26947-65

ACCESSION NR: AP5004303

specimens were pumped at 1.5 times the threshold energy. Experimental
results [are] that for a well-aligned specimen the emission is in

ares, and the angle of misalignment.
spots is due to the same mechanism which is responsible for the forma-
tion of Fabry-Perot rings in a well-aligned resonator. The complex
type of mode in a non-ideal resonator can be considered, in both cases,

tor. Orig. art. has. 3 figures.

Card 2/2

L 29565-66   EEC(k)-2/EWP(k)/EWT(1)/EWT(m)/FBD/I/EWP(e)   IJP(c)   WH/WG

ACC NR: AP6018895   SOURCE CODE: UR/0237/66/000/006/0046/0046

AUTHOR: Vanyukov, M. P.; Venchikov, V. A.; Zhulay, V. Ya.; Isayenko, V. I.;   56
Lyubimov, V. V.   B

ORG: none

TITLE: Two-channel single-pulse laser with an energy of 180 joules

SOURCE: Optiko mekhanicheskaya promyshlennost', no. 6, 1966, 46

TOPIC TAGS: solid state laser, laser emission, neodymium glass

ABSTRACT: An investigation was made of a laser in which high emission energy of the
light pulse was obtained by the use of neodymium glass rods. Cylindrical specimens
of glass (45 mm in diameter and 250 mm long) activated with neodymium were connected
in series-parallel. Each specimen was optically pumped by six direct pulse lamps
placed in a multielliptical illuminator. The laser consisted of two identical
channels, each containing three rods assembled on one axis. Q-modulation was done
by two prisms fixed on a common shaft rotating at 18,000 rpm. The light diameter
of the prism (30 mm) was coordinated with the light diameter of the operating rod by
means of a Galileian tube. The experiments showed that for effective pumping of an
operating body 45 mm in diameter the content of Nd_2O_3 should not exceed 4%. In this
way it is possible to obtain an amplification coefficient of one rod equal to 3 and
provide a yield energy of 25—30 joules from one specimen. Connecting the rods

Card 1/2   UDC: 621.378.324:621.376

ACC NR: AP6018895   0

in series reduces the amplification of optical pumping, owing to the appearance of
free generation of the whole channel. This difficulty can be eliminated by introduc-
ing, between the rods, optical decoupling filters made of uranyl glass. The filters,
together with the operating rods, are placed in the laser illuminators and are
pumped simultaneously with the rod. The optical density of the filter is selected in
such a way that at maximum pumping no free generation appears in the laser channel;
when the filters are illuminated at the moment when maximum Q for the resonator is
reached, one light pulse is generated. By introducing optical decoupling, emission
with an energy of 90 joules at 10^{-7} sec duration was obtained from one channel of the
laser. The angular distribution of generated radiation improves as the optical
pumping increases. Synchronous inclusion of two laser channels was obtained by
appropriate adjustment of the laser elements. The time spread of the pulses emitted
by both channels did not exceed 10^{-8} sec. With the simultaneous inclusion of two
channels, a light pulse with an energy of 180 joules (corresponding to an emission
intensity of 1.5 to 2 hw) was generated.   [JA]

SUB CODE: 20/ SUBM DATE: 07Apr66/ ORIG REF: 001/ ATD PRESS: 5 114

Card 2/2 CC

L 20618-66   FBD/EWT(1)/EWP(e)/EWT(m)/EEC(k)-2/ETC(f)/EPF(n)-2/EWG(m)/T/EWP(k)/
ACC NR: AP6012184 EWA(h)   IJP(o)   SOURCE CODE: UR/0386/66/003/008/0316/0318
WG/AT/WH

AUTHOR: Vanyukov, M. P.; Isayenko, V. I.; Lyubimov, V. V.; Serebryakov, V. A.;
Shorokhov, O. A.

ORG: none

TITLE: Use of a laser operating in the spike mode to obtain a high-temperature
plasma 2/

SOURCE: Zhurnal eksperimental'nyy i teoreticheskoy fiziki. Pis'ma v redaktsiyu.
Prilozheniye, v. 3, no. 8, 1966, 316-318

TOTPIC TAGS: laser application, laser pulsation, neodymium glass, high temperature
plasma, discharge plasma, gas ionization

ABSTRACT: Since the use of a laser for gas ionization or production of a high-
temperature plasma is usually limited to light pulses of duration 10^{-7}—10^{-8} sec,
and for certain applications, say to accelerate chemical reactions, it may be of
interest to obtain longer action of the electromagnetic field of the light wave on
the plasma, the authors have experimented with ionization of air with the aid of
radiation from a laser operating in the spike mode, with total generation duration
of about one millisecond. The neodymium-glass laser used in the investigation
yielded light pulses with energy 800—1400 J. Neodymium-glass rods of 45 mm diam-

Card 1/2

L 20618-66   0

ACC NR: AP6012184

eter and 600 mm long were used, with 2 and 4 per cent concentration of Nd_2O_3. An elliptic illuminator with six conjugate ellipses and straight pump flash lamps was used. The average laser radiation power, at a flash duration 0.8—1.2 msec, was 1—2 Mw, but, taking into account the off-duty factor between spikes, the maximum radiation power could reach 10—30 Mw. When this radiation was focused in air with a 100 mm focus lens a power density 1—3 Gw/cm^2 and a field intensity of the order of 10^7 v/cm were obtained, enough to produce a high-temperature plasma in air. Photographs show that the plasma produced by the gas breakdown is optically opaque and that the laser emission of 1.06 μ wavelength is absorbed in the thin front layer of the cloud. Orig. art. has: 1 figure.   [02]

SUB CODE: 20/   SUBM DATE: 24Feb66/   ORIG REF: 001/   OTH REF: 001

ATD PRESS: 4225

Card 2/2 BK

L 23409-66   FBD/EWT(1)/EWP(e)/EWT(m)/EEC(k)-2/T/EWP(k)/EWA(h)   LJP(c)   RG/WH

ACC NR: AP6011652   SOURCE CODE: UR/0020/66/167/003/0547/0548

AUTHOR: Vanyukov, M. P.; Dmitriyevskiy, O. D.; Isayenko, V. I.; Serebryakov, V. A.

ORG: none

TITLE: Fast-operating liquid Q-switch shutter for neodymium glass laser

SOURCE: AN SSSR. Doklady, v. 167, no. 3, 1966, 547-548.

TOPIC TAGS: laser Q switch, solid state laser, neodymium glass laser

ABSTRACT: An investigation was made of the use of 3,3-diethyl-9,11,15,17-dineo-
pentylenethiapentacarbocyanine iodide dye as a fast-operating shutter in a glass
laser with a trivalent neodymium ion as activator. The emission falls on the longwave
edge of the absorption band of the dye, whose maximum is at 960 mμ. A neodymium
glass rod 15 mm in diameter and 240 mm in length was used. The dye in a plane-par-
allel cuvette 20 mm long, was placed inside the resonator, which had external mirrors
spaced at 1 m. The cuvette was situated between the generating rod and the exit
mirror. The giant pulse energy was 1.5 joule, and the duration of the pulse did not
exceed 25—30 x 10^{-9} sec. The laser spectrum in transition to a single mode
narrowed from 50 to 6—8 Å. Both the threshold of giant pulse generation and its
energy depended on the optical density of the solution. The single pulse generation
appeared when the concentration of the solution was larger than 4 x 10^{-5} mol/1. At
lower concentrations, free generation was observed. The energy of the single pulse

Card 1/2   UDC: 621.378.325

L 23409-66

ACC NR: AP6011652

increased with the concentration up to some value of concentration after which the
increase of energy leveled off. It was found that the value of optimum transmission
coefficient for the free generation mode, for the generation of several pulses
(solution concentration 3.3 x 10^{-5} mol/1), and for the generation of single pulses
(concentration 11 x 10^{-5} mol/1) was approximately the same. Orig. art. has: 3 figures
[JA]

SUB CODE: 20/ SUBM DATE: 14Jun65/ ORIG REF: 005/ OTH REF: 002/ ATD PRESS:
4234

Card 2/2 dda

L 34850-66   FBD/EWT(1)/EWP(e)/EWT(m)/EEC(k)-2/T/EWP(k)   IJP(c)   WG/WH

ACC NR: AP6018438   SOURCE CODE: UR/0051/66/020/006/0963/0969

AUTHOR: Vanyukov, M. P.; Isayenko, V. I.; Luizova, L. A.; Shorokhov, O. A.

ORG: none

TITLE: Losses in a resonator when the stimulated emission spectrum of Nd^{3+} in glass is narrowed

SOURCE: Optika i spektroskopiya, v. 20, no. 6, 1966, 963-969

TOPIC TAGS: laser emission, emission spectrum, neodymium, interferometer, RESONATOR, LINE NARROWING

ABSTRACT: The results of a study of the losses introduced by a Fabry-Perot interferometer to the intensity of the stimulated emission of a neodymium glass laser are presented. The spectral emission band is narrowed by introducing a selective system, in the form of a interferometer, into the resonator. The experimental equipment is illustrated and described in detail. The results indicate that the emission spectrum is significantly narrowed as the coefficient of reflection of the plate is increased (1 to 2 Å at 60 to 80% reflectivity). When the coefficient of reflection is low, the energy generated is 70% that obtained without selection and remains so until reflection reaches 80%, whereupon it drops rapidly. Losses due to various instrument components are described and their respective magnitudes estimated. Orig. art. has: 3 formulas, 6 figures.   [14]

SUB CODE: 20/   SUBM DATE: 20Mar65/   ORIG REF: 006/   OTH REF: 004
ATD PRESS: 5031   UDC: 621.375.9:535(206.1)
Card 1/1 AV

L 42940-66   EWT(l)/EWP(e)/EWT(m)/EEC(k)-2/T/EWP(k)   IJP(c)   WG/WH

ACC NR: AP6030175   SOURCE CODE: UR/0237/66/000/008/0001/0004

AUTHOR: Azin, V. A.; Vanyukov, M. P.; Isayenko, V. I.; Serebryakov, V. A.;
Shorokhov, O. A.

ORG: none

TITLE: An Nd-glass laser with a smooth displacement of the spectral emission band

SOURCE: Optiko-mekhanicheskaya promyshlennost', no. 8, 1966, 1-4

TOPIC TAGS: solid state laser, neodymium laser, glass laser, laser output, laser
efficiency

ABSTRACT: Piecewise continuous narrowing of the emission spectrum of a Q-switched
Nd-glass laser at 0.2—0.3 nm was achieved experimentally without appreciable loss of
efficiency by inserting the Fabry-Perot etalon inside the resonant cavity. The ex-
perimental setup is shown in Fig. 1. The KGSS-7 neodymium-glass rod used was 240 rm
long and 15 mm in diameter. A rotating prism (30 x 10³ rpm) Q-switch and a 1-m
resonator produced a 3-j single pulse with a duration of ∿40 nanosec. The spectral
separation was achieved by means of an F-P etalon whose mirrors were 95% reflective.
Another F-P etalon with 40% reflectivity and inclined at an angle ψ to the resonator
axis was used as a spectral selector. The output mirror was either an F-P etalon with
non-coated quartz plates (13% reflective) or a dielectric mirror. The variation of
the spectral emission band and energy of a single-pulse laser as a function of ψ were
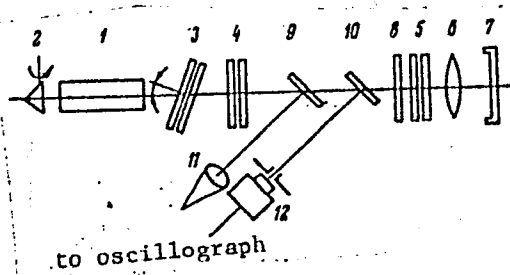
UDC: 621.378.325

Card 1/3

L 42940-66

ACC NR: AP6030175

Fig. 1. Experimental setup

1 - Neodymium glass rod; 2 - prism;
3 - F-P etalon with reflection coefficient
R = 40%; 4 - F-P etalon without reflective
coating (in some experiments a dielectric
mirror (R = 13%) was substituted); 5 -
spectral separator F-P etalon with R = 95%;
6 - objective; 7 - camera; 8 - dull plate
and neutral filters; 9, 10 - light separating
plates; 11 - calorimeter; 12 - photocell.

to oscillograph

shown graphically. Emission spectra of a single laser pulse for various ψ (120',
240', and 300') and the smooth displacement of the emission band in the free genera-
tion mode are shown. The experimental data indicate the following: 1) spectral
narrowing to 0.2—0.3 nm occurred without a loss in the single pulse laser efficiency
when an F-P etalon with uncoated plates was used as an output mirror; 2) simultaneous
use of two etalons makes it possible to narrow the emission spectrum of a single
pulse laser down to 0.01 nm; 3) use of an F-P etalon with coated plates inside the
resonant cavity ensures smooth displacement of the spectral band within the 5—7 nm

Card 2/3

L 42940-66

ACC NR: AP6030175

range for both free and Q-switched generation; 4) when the spectral band is dis-
placed,   the energy of a single pulse laser goes through several maxima which are
spaced by a distance Δλ equal to the resonator constant. Orig. art. has: 5 figures.
[YK]

SUB CODE: 20/ SUBM DATE: 08Jan66/ ORIG REF: 001/ OTH REF: 004/ ATD PRESS: 5069

Card 3/3 MLP

L 05715-67   EWT(1)/EEC(k)-2/EWP(k)   IJP(c)   WG
ACC NR: AP7001048   SOURCE CODE: UR/0051/65/019/001/0160/0160

REVIEWER: Vanyukov, M. P.

ORG: none

TITLE: Optical quantum generators (lasers) by Kats, M. L., Kovner, M. A., and Sidorov, N. K.

SOURCE: Optika i spektroskopiya, v. 19, no. 1, 1965, 160

TOPIC TAGS: quantum generator, ruby laser

ABSTRACT: The book under review has nine chapters devoted to the general theory of radiation; the general theory of generators; the practical application of lasers; and descriptions of ruby lasers, fluorite lasers, glass lasers, gas lasers, organic and complex compound lasers, and semiconductor lasers. The book appears to have merit in presenting a somewhat exhaustive collection of articles in the field up to the middle of 1963, but it is highly criticized for typographical and terminological errors. It is even suggested that some of the material is incorrect of intentionally misused to give an appearance of knowledgeability in the field. [JPRS]

SUB CODE: 20 / SUBM DATE: none

Card 1/1   UDC: 621.375.9:535.048

ACC NR: AP7002725   SOURCE CODE: UR/0237/66/000/012/0065/0065

AUTHOR: Vanyukov, M. P. (Doctor of sciences); Venchikov, V. A.; Isayenko, V. I.;
Serebryakov, V. A.

ORG: none

TITLE: A 6-Gw neodymium glass laser

SOURCE: Optiko-mekhanicheskaya promyshlennost', no. 12, 1966, 65

TOPIC TAGS: solid state laser, neodymium glass, laser giant pulse laser, Q switching,
passive switching, polymethine dye chemical

ABSTRACT: A 6-Gw neodymium glass laser with a simple phototropic Q-switch is des-
cribed. The laser consists of three cylindrical rods in series, each
250 mm long and 45 mm in diameter. Each rod is placed in a multielliptic
reflector and is pumped by six direct flashlamps. The external cavity
consists of one 99.6%-reflective dielectric mirror and a Q-switch placed
between the first and second rods. The Q-switch consists of a cell made
of two plane-parallel (error less than 1 min of arc) glass plates joined
optically through a 1-cm-thick glass ring. The cell is filled with a
polymethine-dye solution to a concentration at which the solution is 99%
reflective at 1.06 μ. At maximum pumping energies, single 100—120-j,
20-nanosec pulses were obtained. By increasing the pumping energy or by

Card   1/2   UDC: 621.378.324:621.376

ACC NR: AP7003147   SOURCE CODE: UR/0368/66/005/006/0712/0717

AUTHOR: Andreyev, S. I.; Vanyukov, M. P.; Daniel', Ye. V.

ORG: none

TITLE: Surface discharge as a source of intensive light flashes

SOURCE: Zhurnal prikladnoy spektroskopii, v. 5, no. 6, 1966, 712-717

TOPIC TAGS: surface discharge, spark discharge, light flash, light emission, emission spectrum

ABSTRACT: Luminous characteristics of the discharge channel over a titanium dioxide ceramic surface have been investigated in argon and xenon atmospheres. It was shown that the luminous emission intensity of the surface spark is 10 times greater than that of a free spark in air. The spectral distribution of the emission was measured. At extremely rigid conditions, the surface discharge is shown to emit as a blackbody with a temperature of 63,000K in argon and 40,000K in xenon.

Card 1/2   UDC: 537.523.4

ACC NR: AP7003147

The emission spectra and space-time scannings of the surface-discharge channel in various gases are given. The reference light source was contributed to the authors by N. N. Ogurtsova and I. V. Podmoshenskiy. Orig. art. has: 1 table and 4 figures. [Authors' abstract]

[AM]

SUB CODE: 20, 03/SUBM DATE: 12Jul65/ORIG REF: 008/OTH REF: 008/

Card 2/2

VANYUKOV, N.

Agriculture

Cultivation of alfalfa in Western Siberia.   Novosibirsk, Novosibgiz, 1951.

Monthly List of Russian Accessions, Library of Congress, November 1952. Unclassified.

VANYUKOV, N. F., Candidate of Agric Sci (diss) -- "The cultivation of lucerne

in the Baraba lowland". Omsk, 1959. 18 pp (Abstracts of Dissertations Presented

at the Omsk Agric Inst im S. M. Kirov), 150 copies (KL, No 20, 1959, 114)

VANYUKOV, N.F.

Biology of flowering and fruit formation in alfalfa. Izv. vost. fil.
AN SSSR no.12:113-119 '57.   (MIRA 11:1)
        (Baraba Steppe--Alfalfa)   (Plants, Flowering of)

VANYUKOV, N. V.

Disorder of water-mineral metabolism and hemodynamics in acute
gastrointestinal diseases in infants and problems in their treat-
ment. Pediatriia no.4:28-34 '62.   (MIRA 15:4)

1. Iz otdeleniya patologii rannego vozrasta (zav. - prof. I. V.
TSimbler) Instituta pediatrii AMN SSSR (dir. - dotsent M. Ya.
Studenikin)

   (WATER METABOLISM) (BLOOD—CIRCULATION, DISORDERS OF)
   (GASTROENTEROLOGY) (MINERAL METABOLISM)

VANYUKOV, N.V., aspirant

Syndrome of potassium deficiency in toxic forms of acute gastro-
intestinal diseases in young children and problems of their
treatment. Pediatriia 41 no.11:71-79 N'62   (MIRA 17:4)

1. Iz 1-y kliniki rannego detskogo vozrasta (zav. - prof.
I.V. TSimbler) Instituta pediatrii (dir. - dotsent M. Ya.
Studenikin) AMN SSSR.

VANYUKOV, N.V.

Intravenous drip infusions in toxic forms of acute gastrointestinal
diseases in young children. Sov. med. 27 no.3:9-16 Mr '64.
(MIRA 17:11)

1. 1-ya klinika rannego detskogo vozrasta (zav. T.S. Sokolova) Insti-
tuta pediatrii (dir. - dotsent M.Ya. Studenikin) AMN SSSR, Moskva.

GAVRILOV, V.I.; LABENETS, V.F.; MASHKEVICH, N.G.; VANYUKOV, S.F.; GREKOV, K.A.

[Model technological charts for growing and harvesting farm crops applicable in working out scientific farming systems and compiling long-range and yearly plans for collective and yearly state farms of Ryazan Province] Primernye tekhnologicheskie kart; po vozdely-vaniiu i uborke sel'skokhoziaistvennykh kul'tur dlia ispol'zovaniia pri razrabotke nauchno-obosnovannykh sistem vedeniia khoziaistva, sostavleniia perspektivnykh i godovykh planov ego razvitiia v kolkho-zakh i sovkhozakh Riazanskoi oblasti. Riazan', 1960. 169 p.
(MIRA 14:6)

1. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk imeni V.I.Le-nina. 2. Rukovoditel' brigady Vsesoyuznoy akademii sel'skokhozyayst-vennykh nauk imeni V.I.Lenina (for Gavrilov). 3. Ryazanskoye oblastnoye upravleniye sel'skogo khozyaystva (for Vanyukov, Grekov).
             (Ryazan Province--Agriculture)
             (Ryazan Province--Field crops)

PAVLIKOV, G.V., inzh.; BUCHNEV, A.I., tekhnik; VANYUKOV, V.K., slesar'

Use of the BF2 adhesive in repairing friction clutches. Elek.i
tepl.tiaga 6 no.5:15 My '62.   (MIRA 15:6)
        (Diesel locomotives—Maintenance and repair)
                        (Adhesives)

TAYCHINOV, S.N., prof.; VANYUKOV, Ya.I.; GALIMOV, G.F.; KURCHEYEV, P.A.;
     CHMELEV, M.P.; GARIFULLIN, F.Sh.; BURANGULOVA, M.N.; MOSEYEVA,
     Z.V.; SHAROVA, A.S.; CHMELEV, M.P.; MAZILKIN, I.A.; GIZZATULLIN,
     S.G.; DOBROV, A.V.; KUZNETSOV, F.V.; FILATOV, L.P., red.;
     KOBYAKOV, I.A., tekhn.red.

[Soils of the Mazhita Gafuri Collective Farm and their efficient
utilization] Pochvy kolkhoza imeni Mazhita Gafuri i puti ikh
ratsional'nogo ispol'zovaniia. Pod red. S.N.Taichinova. Ufa,
1960. 124 p.   (MIRA 14:1)

1. Akademiya nauk SSSR. Bashkirskiy filial, Ufa. Institut
biologii.
          (Bashkiria--Soils)

YANYUKOV, YA. I.

TAYCHINOV, S.N., doktor sel'skokhozyaystvennykh nauk; GAYSIN, Sh.A., kandidat
sel'skokhozyaystvennykh nauk; VANYUKOV, Ya.I., kandidat sel'skokho-
zyaystvennykh nauk; SMIRNOV, P.I.

Agricultural system in Bashkiria. Zemledelie 5 no.7:14-20 Jl '57.
(Bashkiria--Agriculture)   (MLRA 10:8)

1. KABANOV, B.; FILIPPOV, S.; VANYUKOVA L.; IOFA, Z.; PROKOF'YEVA, A.

2. USSR (600)

"The Supertension of Hydrogen over Lead"; Zhur. Fiz. Khim.; 13, No. 3, 1939;
Physico-Chem. Insti. imeni L. Ya. Karpova; rcd 21 July 1938.

9. ▄▄ Report U-1613, 3 Jan. 1952.

Overvoltage of hydrogen on lead in the presence of surface-active organic compounds. L. Vanyukova and B. Kabanov. *J. Phys. Chem.* (U. S. S. R.) 14, 1620-5 (1940).—The H overvoltage on spongy Pb in 2-8 N H₂SO₄ is raised by org. addns. The increase is independent of the c. d. Substituted NH₃ compds. cause the highest increase, e. g., *iso*-C₅H₁₁ 0.46 v. in 0.002 M soln., Bu 0.29 v. in 0.001 M and Pr 0.15 v. in 0.01 M soln. Sulfates of (NMe₃CH₂)₂, NPhMe₂, benzylpyridine, β-naphthaquinoline, and acridine cause an increase of 0.01-0.35 v. Hexonal, C₅H₅OH, and other aliphatic substances are less active. No definite mechanism of the effect is suggested.

B. C. P. A.

VANYUKOVA, L.:

Moscow

Laboratory of Surface Phenomena, Physico-Chemical Institute imeni Karpov, (-1940-)

"The Overvoltage of Hydrogen over Lead in the Presence of Surface-Active Organic Compounds."

Zhur. Fiz. Khim., Vol. 14, No. 12, 1940

VANYUKOVA, L . V.

USSR/ Chemistry   Physical chemistry

Card   : 1/1

Authors   : Vanyukova, L. V., and Kabanov, B. N.

Title   : Electrochemical investigation of passive iron

Periodical : Zhur. fiz. khim. 28, Ed. 6, 1025 - 1035, June 1954

Abstract   : The nature of electrochemical processes, taking place on a passive iron
              electrode in alkali solutions during anode polarization, was investigated
              and the effect of Cl-ions on these processes is explained. It was found
              that the capacitance of the double Fe-electrode layer, oxidized by
              heating in the air, measured at 20000 per/sec, is approximately 4 times
              lower than the capacitance of a metal free of oxides. The inhibiting
              effect of Cl-ions on the rapid oxygen adsorption and desorption process
              is explained. Twenty-two references: 18 USSR, 3 German and 1 USA.
              Tables; graphs.

Institution : Acad. of Sc. USSR, Institute of Physical Chemistry, Moscow

Submitted   : July 21, 1953

VANYUKOVA, L.V.; ISAYEVA, M.M.; KABANOV, B.N.

Solubility and mechanism of solution of quadrivalent lead.
Dokl. AN SSSR 143 no.2:377-379 Mr '62.   (MIRA 15:3)

1. Institut elektrokhimii AN SSSR i Moskovskiy avtomekhanicheskiy
institut. Predstavleno akademikom A.N.Frumkinym.
                    (Lead oxides)
                    (Sulfuric acid)

ACCESSION NR: AP4024410   S/0204/64/004/001/0137/0141

AUTHORS: Nametkin, N.A.; Berezkin, V.G.; Vanyukova, N.Ya.; Vdovin,V.M.

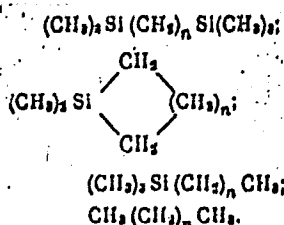TITLE: Gas-liquid chromatography of several silicohydrocarbons and
        paraffins.

SOURCE: Neftekhimiya, v. 4, no. 1, 1964, 137-141

TOPIC TAGS: gas liquid chromatography, paraffin, silicohydrocarbon,
elution characteristic, retention time, chromatographic analysis

ABSTRACT: The elution characteristics of hydrocarbons and of sili-
cohydrocarbons which are structurally similar analogs of the hydro-
carbons were investigated in order to determine if mixtures of these
materials can be identified chromatographically. The relative reten-
tion time of certain silicohydrocarbons and of paraffins on two stat-
ionary liquid phases of different polarity (polymethylphenylsiloxane
(I) and polyethyleneglycol M.W. 154) (II)) was determined at differ-
ent temperatures. The following homologous series of hydrocarbons and.
silicohydrocarbons were studied

Card   1/5

ACCESSION NR: AP4024410

$(CH_3)_2 Si (CH_3)_n Si(CH_3)_3;$

$(CH_3)_3 Si \diagup^{CH_2}_{\diagdown CH_2} (CH_3)_n;$

$(CH_3)_3 Si (CH_2)_n CH_3;$

$CH_3 (CH_2)_n CH_3.$

Comparison of the retention time in phases I and II at 100 and 75°, respectively, is shown in fig. 1: The $(CH_3)_3 Si(CH_2)_n Si(CH_3)_3$ type compounds can be identified in mixtures with paraffins and other silicohydrocarbons. By lowering the temperatures of the chromatographic columns the selected phases I and II can be used to ident'fy the other series of compounds (fig. 2). It is recommended that the elution characteristic be determined on the different stationary phases at different temperatures and not at the same temperature. The logarithm of the relative retention time of the silicohydrocarbons can be represented as the sum of the partial values corresponding to the specific bonds: (V.G. Berezkin and V.S. Kruglikova, Neftekhimiya, No. 6, 845 (1962)):

Card 2/5

ACCESSION NR: AP4024410

$$\lg \alpha_i = \sum_{gj} n_{gj} \Gamma_{gj} - \sum n_{gj} \Gamma_{gj},$$

where α_i = relative retention time; Γ_{gj} = value of $\lg \alpha_i$ corresponding to the determined combination of bonds or structural elements and n_{gj} = number of given structural elements in the molecule. The values Γ_{gj} for the $CH_2 - CH_2$ bond are practically the same for paraffins and for the silicohydrocarbons, and this is in agreement with the similarity of the physical and chemical properties of the tetraorgano-silicon compounds and of the structurally similar hydrocarbons. Orig. art. has: 3 tables, 2 figures, 1 equation and 1 formula

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR im. A.V. Topchiyeva (Institute of Petrochemical Synthesis, AN SSSR)

SUBMITTED: 13May63

DATE ACQ: 17Apr64

ENCL: 02

SUB CODE: CH

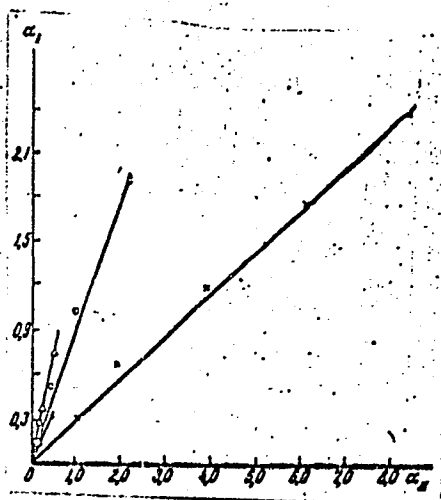NR REF SOV: 009

OTHER: 003

Card 3/5

Fig. 1

Relationship between the relative retention capacity of silicohydrocarbons and paraffins on polymethylphenylsiloxane oil (α_I at 100C) and polyethyleneglycol (α_{II} at 75C).

x--compounds of the series $(CH_3)_3Si(CH_2)_n Si(CH_3)_3$;

O-- n-paraffins;

•--$(CH_3)_3Si(CH_2)_nCH_3$

Δ--$(CH_3)_2Si\begin{array}{c}CH_2\\\diagup\hspace{1em}\diagdown\\CH_2\end{array}(CH_2)_n$

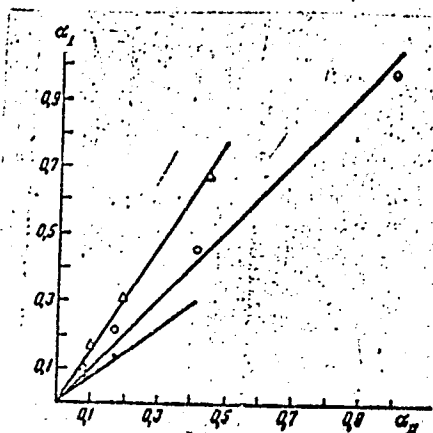Card   4/5

Fig. 2
Relationships between α_I at 75C and
α_{II} at 50C. Designations the same as in
fig. 1.

Card   5/5

VAKHRAMEYEV, V.A., otv. red.; SHVEDOV, N.A., otv. red.; VANYUKOVA,
          O.M., red.

    [Gondwana] Gondvana. Moskva, Izd-vo "Nauka," 1964. 139 p.
    (Its: Doklady sovetskikh geologov, Problema 9) (MIRA 17:9)

    1. International Geological Congress. 22d, 1964.

VANIUKOVA, O.P.; GOROSHKINA, N.A.; DREYSIN, G.I.; LUK'YANOVA, Ye.D.;
RYATOVA, G.S.; SAMOYLOVA, L.G.; DARKOV, G.V.; LEBEDEV, A., tekhn.red.

[State budgets of the Union republics in the fifth five-year plan;
a statistical manual] Gosudarstvennyp biudzety soiuznykh respublik
v piatoi piatiletke; statisticheskii sbornik. Moskva, Gosfinizdat,
1957. 174 p.   (MIRA 10:12)

1. Russia (1923- U.S.S.R.) Byudzhetnoye upravleniye.
                           (Budget)

VANYUKOVA, O.P.; DREYSIN, G.I.; LUK'YANOVA, Ye.D.; RYATOVA, G.S.;
SAMOYLOVA, L.G.; IL'VOVSKIY, S., otv. red.; LEBEDEV, A.,
tekhn. red.

[Expenditures for social and cultural measures from the
state budget of the U.S.S.R.; statistical abstract] Ras-
khody na sotsial'no-kul'turnye meropriiatiia po gosudarstven-
nomu biudzhetu SSSR; statisticheskii sbornik. Moskva, Gos-
finizdat, 1958. 90 p.   ·   .. ..   (MIRA 16:7)

1. Russia (1923- U.S.S.R.) Byudzhetnoye upravleniye. 2. Ot-
del finansovo-ekonomicheskoy statistiki Byudzhetnogo uprav-
leniya Ministerstva finansov SSSR (for Vanyukova, Dreysin,
Luk'yanova, Ryatova, Samoylova).   (Budget).

ACCESSION NR: AP4028987   S/0280/64/000/002/0153/0158

AUTHOR: Vanyurikhin, G. I. (Leningrad)

TITLE: Design of automatic-control systems that contain nonstationary elements

SOURCE: AN SSSR. Izvestiya. Tekhniche skaya kibernetika, no. 2, 1964, 153-158

TOPIC TAGS: automatic control, nonstationary element automatic control, automatic control theory, automatic control design

ABSTRACT: No practical method of solving the problem of synthesizing a nonstationary-element-containing automatic-control system is known to the author. Up to now, the problem used to be solved by "freezing" the parameters (coefficients of equations) of nonstationary (variable-parameter) elements at convenient moments of time. When the rate-of-change of the parameters ic comparable to that of the system transients, the freezing of coefficients may introduce serious errors. The author suggests a "qualitatively better" method,

Card 1/2

ACCESSION NR: AP4028987

viz., freezing of the weight function of the nonstationary element. The non-stationary element is approximately replaced, in the neighborhood of a point t_0, by a stationary element, thus reducing the entire system to a stationary system; the speed and nature of the time variation of the parameters determines the new form of the transfer function of the element which replaces the nonstationary element. "In conclusion, the author is deeply grateful to V. A. Besekerskiy and A. N. Gerasimov for their advice and help in the work." Orig. art. has: 3 figures and 45 formulas.

ASSOCIATION: none

SUBMITTED: 29Mar63   DATE ACQ: 30Apr64   ENCL: 00

SUB CODE: IE   NO REF SOV: 003   OTHER: 001

Card 2/2

ACCESSION NR: AP4041647   S/0146/64/007/003/0033/0038

AUTHOR: Vanyurikhin, G. I.

TITLE: Synthesizing variable-parameter systems by a "frozen" weight function

SOURCE: IVUZ. Priborostroyeniye, v. 7, no. 3, 1964, 33-38

TOPIC TAGS: automatic control, automatic control system, variable parameter automatic control, automatic control synthesis

ABSTRACT: Thus far, synthesizing variable-parameter automatic-control systems has been performed by "freezing" the system coefficients at suitable characteristic moments of time. However, when the rate-of-change of the coefficients is comparable to that of the transient process, the above method may yield incorrect results. Hence, "freezing" of the weight function of the system nonstationary unit is suggested instead. Weight functions are written for a system that comprises one stationary and one nonstationary unit; integral

Card 1/2

ACCESSION NR: AP4041647

equations are set up for these functions; and using the Laplace transformation, final formulas for the "frozen" weight functions are developed. This method gives some consideration to the rate and nature of the change of the system coefficients. Two numerical examples illustrate the method. Orig. art. has: 3 figures and 14 formulas.

ASSOCIATION: Leningradskaya voyennaya inzhenernaya Krasnoznamennaya akademiya im. A. F. Mozhayskogo (Leningrad Military Engineering Academy)

SUBMITTED: 10Dec63

SUB CODE: IE, DP

NO REF SOV: 002

ENCL: 00

OTHER: 000

Card 2/2

ACC NR: AP6024377   SOURCE CODE: UR/0280/66/000/002/0196/0208

AUTHOR: Besekerskiy, V. A.; Vanyurikhin, G. I., Gerasimov, A. N. (Leningrad)

ORG: none

TITLE: Design and calculation of unsteady-state automatic control systems by the "frozen-response" method

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 2, 1966, 196-208

TOPIC TAGS: unsteady state system, automatic control system, circuit design, function analysis, differential equation

ABSTRACT: The complicated task of the synthesis of an unsteady-state system may be simplified and reduced to the task of synthesis of a steady-state system if the response of unsteady-state elements to a standard input signal, e.g. the step-function, is "frozen," as it were. This may be accomplished by the method of successive approximations, with the first approximation yielding fairly accurate results. The derivation of the subsequent approximations is associated with an increase in the order of the function $\tilde{W}(p)$. (This function is equivalent to the transfer function $W(p)$ of steady-state system.) Hence, it is expedient to simplify the form of the

Card 1/2

ACC NR: AP6024377

signals received at the input of the unsteady-state element, i.e. to approximate them with simple functions. The synthesis of variable-parameter linear systems of this kind may also be accomplished by the fitting method if the solution within the separated segments is sought by freezing the responses of the unsteady-state element to a standard input signal. This method converges when the coefficients of the differential equations describing the system are piece-wise-continuous and may be expanded into a Taylor series over a given interval of time. Thus, the problem of the synthesis of unsteady-state systems can be reduced to an algebraic problem. "In conclusion the authors wish to express their profound gratitude to Kh. L. Smolitskiy for assistance in writing Section 3 of the present article." Orig. art. has: 6 figures, 46 formulas.

SUB CODE: 12, 09/ SUBM DATE: 27May64/ ORIG REF: 005/

Card   2/2

VANYUSHIN, Aleksandr Fadeyevich; BALASHOV, V.A., red.

[Scutchers] Trepal'nye mashiny. Ivanovo, Ivanovskoe knizhnoe izd-vo, 1964. 55 p. (MIRA 17:8)

USSR/Microbiology. General Microbiology. System-   F-1
         atics, Morphology, Cytology.

Abs Jour : Ref Zhur - Biol., No 14, 1958, No 62199

Author   : Spirin A.S., Belozerskiy A.N., Shugayeva N.V.,
           Vanyushin B.F.
Inst   : —
Title   : Studies of the Specificity of the Species of
           Nucleic Acids in Bacteria.

Orig Pub : Biokhimiya, 1957, 22, No 4, 744-754

Abstract : The RNA and DNA nucleotide composition was studied
           in 19 different species of bacteria and acti-
           nomycetes. The nucleotide composition of DNA
           uncovers a distinct specificity of species, being
           very similar in closely related species, and dif-
           fering sharply in distant species. In this,
           Proteus vulgaris and Aerobacter aerogenes differ
           considerably, according to the DNA composition,
           from other species. Enterobacteriaceae force
Card   : 1/3

USSR/Microbiology. General Microbiology. System-
         atics, Morphology. Cytology.   F-1

Abs Jour : Ref Zhur - Biol., No 14, 1958, No 62199

          doubts as to the accuracy of their relation to
          this family. By analogy, considerable differ-
          ences in DNA composition between Bacterium mor-
          ganii and P. vulgaris affirms that the relation
          of Bact. morganii to g. Proteus is scarcely
          strictly proven. RNA nucleotide composition
          possesses a considerably less expressed specificity
          of species and quite certain, although insigni-
          ficant differences, uncovered only in distant
          species. Similarly, between the RNA and DNA com-
          positions there is a known correlation, which
          expresses itself in the increase of the relation-
          ship guanylic acid + cytidylic acid/ adenylic
          acid + uridylic acid in RNA by the transition
          from species with a less significant guanine +
          cytosine/ adenine + thymine in DNA to species

Card   : 2/3

                              2

USSR/Microbiology. General Microbiology. Systematics   F-1
          Morphology, Cytology.

Abs Jour : Ref Zhur - Biol., No 14, 1958, No 62199

          with more significance for this relationship.
          Studies of RNA and DNA nucleotide composition,
          together with special microbiological tests, can
          be used to solve problems about the systematic
          location of this or other bacterial species.
          -- T.I. Tikhonenko

Card   : 3/3

17(3)   SOV/20-127-2-63/70
AUTHORS: Vanyushin, B. F., Belozerskiy, A. N., Corresponding Member
             AS USSR

TITLE: A comparative Investigation of the Composition of Ribonucleic
             Acids in Higher Plants

ABSTRACT: The composition mentioned in the title has hitherto been in-
             vestigated only in several species (Refs 1-8). Conclusions
             cannot be drawn from these data to the composition of this acid
             (RNA) or to its variability limits in plants of different sy-
             stematic groups. In the present paper the nucleotide composi-
             tion of 28 plant species (representatives of 5 types, 6 classes,
             23 orders, and 25 families; Ref 9) was investigated. Seeds,
             pollens, and thallom material served for this purpose (supplied
             by M. A. Mazurenko, F. D. Kostik, and M. S. Chichagova). The
             ribomononucleotides were separated by a) electrophoresis, and
             b) chromatographically a) The deliquescence of greater quanti-
Card 1/3   ties of liquid (1oo -4oo μl) was prevented by two graphite-pencil-

A Comparative Investigation of the Composition of   SC7/20-127-2-63/70
Ribonucleic Acids in Higher Plants

stripes. The position (sequence) of the nucleotides from the
cathode to the anode was the following: cytidylic-, adenylic-,
guanylic-, and uridylic acid. The mobility of these nucleotides
was similar to that of the publications (Ref 11). Considerable
quantities of pigmented substances disturb in the hydrolysates
of the RNA of many substances so that the determination of the
nucleotides was only possible by electrophoresis on paper.
Table 1 shows the results. They show that certain differences
in the RNA composition may be reliably detected only between
the representatives of plants classes which are most remote
from one another. This points to a relatively low specifity
of this composition in the higher plants. The investigated
plants differ not only with respect to their systematic position
and origin, but also to their ecology; there are arborer.-,
shrublike-, herbaceous-, annual-, and perennial plants, culture
plants with a specialized metabolism (fruit- and oil plants,
cereals, gutta producers) as well as uncultivated plants, relic
species as well as the representatives of the recent families.
In spite of these differences their total RNA composition is
Card 2/3   strikingly similar. This shows that the RNA composition depends

A Comparative Investigation of the Composition of
Ribonucleic Acids in Higher Plants   SOV/2o-127-2-63/7o

only little on the essential conditions for life of the plant
organisms and changes only inconsiderably also in the course
of their evolution. What is even more striking - the RNA com-
position is unusually similar to that of microorganisms and
animals. Thus it is similar for all organisms. Therefore the
nucleotide sequence in the RNA molecule chain must be investiga-
ted since the RNA specifity is apparently bound to be due mainly
to this structural factor. There are 1 table and 13 references,
5 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: April 3o, 1959

Card 3/3

VANYUSHIN, B. F., CAND BIOL SCI, "NUCLEOTIDE COMPOSITION
OF DESOXYRIBONUCLEIC AND RIBONUCLEIC ACIDS OF HIGHER AND
LOWER PLANTS." MOSCOW, 1960. (ACAD SCI USSR. INST of Biochemistry
IM A. N. BAKH. MOSCOW STATE UNIV IM M. V. LOMONOSOV. Biol
AND SOIL FAC). (KL, 2-61, 204).

VANYUSHIN, B.F.; BELOZERSKIY, A.N.; BOGDANOVA, S.L.

Comparative study of the nucleotide composition of ribonucleic
and desoxyribonucleic acids in some fungi and myxomycetes. Dokl.
AN SSSR 134 no.5:1222-1225 O '60.   (MIRA 13:9)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
2. Chlen-korrespondent AN SSSR (for Belozerskiy).
      (FUNGI)   (NUCLEOTIDES)   (MYXOMYCETES)

VANYUSHIN, B.F.; BEOLZERSKIY, A.N.

Nucleotide composition of ribonucleic and desoxyribonucleic acids in some autotrophic bacteria. Dokl. AN SSSR 135 no.1:197-199 N '60.
(MIRA 13:11)

1. Moskovskiy gosudarstvennyy universitet im.M.V.Lomonosova.
2. Chlen-korrespondent AN SSSR (for Belozerskiy).
        (BACTERIA, AUTOTROPHIC) (NUCLEOTIDES)

VANYUSHIN, B.F.; FAYS, D.

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(MIRA 15:6)

1. Faculty of Biology and Soil Science, State University, Moscow.

(NUCLEOTIDES)   (POLLEN)   (NUCLEIC ACIDS)

VANYUSHIN, B F.

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VANYUSHIN, B.F.

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(BIOCHEMISTRY—CONGRESSES)
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    Mystery of protein synthesis is solved. Priroda 51 no.6:103-105
    Je '62.
                                                 (MIRA 15:6)

    1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
             (PROTEIN METABOLISM)

VANYUSHIN, B. F.; MASHARINA, L. V.; BELOZERSKIY, A. N., akademik

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1. Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova.

(Nucleic acids)   (Pyrimidines)

VANYUSHIN, B.F.

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1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Nucleic acids)

AUTHOR: Vanyushin, B F ; Kokurina, N. A.; Belozerskiy, A. N. (Academician)

Abstract: The species composition of DNA was studied in five species of
bacteria of the order Pseudomonads

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'65.   (MIRA 18:5)

1. Rekomendovana kafedroy biokhimii rasteniy Moskovskogo gosudarst-
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1. Moskovskiy gosudarstvennyy universitet.

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MAL'CHONKOVA, A.S.,inzh.; KOSTOMAROVA, S.I.; DENISOVA, N.G.; DIKIKH, L.S.;
NEDORUBOV, Ye.Ye.; SHVYRKINA, R.P., udarnik kommunisticheskogo
truda; VANYUSHIN,M.S.

Widen the movement of shock workers and collectives of communist labor
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20 no.9:25-28 S'60.   (MIRA 13:10)

1. Mytishchinskaya avtomaticheskaya telefonnaya stantsiya (for
Mal'chonkova). 2 Nachal'nik L'vovskogo otdeleniya svyazi Podol'skogo rayona,
Moskovskoy oblasti (for Kostomarova). 3 Ispolnyayushchiy obyazannosti
inzhenera Lyublinskoy avtomaticheskoy telefonnoy stantsii (for Denisova).
4. Nachal'nik Tushinskoy kontory svyazi (for Dikikh). 5. Nachal'nik
3-go otdeleniya svyazi Noginska (for Nedorubov). 6. Ekspeditor Shchelkovskoy
kontory svyazi (for Shvyrkina). 7. Nachal'nik Serpukhovskogo usilitel'nogo
punkta (for Vanyushin).
                        (Telecommunication--Employees)
                        (Socialist competition)

Vanyushin, N

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Kizelovskiy Kamennougol'Nyy Basseyn (Kizel Coal Basin) Perm', Perm-
Skoye Knizhnoye 1 ZD-VO, 1958.

249 P. Illus., Diagrs., Graphs, Map, Tables.

On verso of title page: Kombinat "Kizelugol" 1 Tsentral'Noye Byuro
Tekhnicheskoy Informatsii Permskogo Sovnarkhoza.

SIDOROV, I.N.; KUKLIN, I.S.; KHRUSHCHEV, G.N.; SHTUKATUROV, K.M.; ROZOV,
B.V.; BUDKOV, V.Ye.; VANYUSHIN, N.M.; GICHKO, V.A.; SUMIN, A.A.

Hydraulic breaking of hards in the Kizel Basin coal mines. Ugol'
37 no.3:16-18 Mr '62.   (MIRA 15:2)

1. Gornogeologicheskiy institut Ural'skogo filiala AN SSSR (for
Sidorov, Kuklin, Khurshchev, Shtukaturov). 2. Kombinat Kizelugol'
(for Rozov, Budkov, Vanyushin, Gichko, Sumin).
                    (Kizel Basin--Hydraulic mining)

VANYUSHIN, N.M., red.; ZDANKOVICH, N.A., red.; KUCHERSKIY, L.V., red.;
    LITVINOV, S.V., red.; MUKHIN, I.A., red.; ROZOV, B.V., red.;
    SOSHKIN, I.M., red.; PONOMAREVA, V.P., red.; NEUDAKINA, N.G.,
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VANYUSHIN, S.

Disappointing omissions, erroneous conclusions. Prom.Arm. 6 no.9:
80-81 S '63.   (MIRA 16:12)

1. Glavnyy geolog gornogo otdela Armyanskogo gosudarstvennogo instituta
po proyektirovaniyu predpriyatiy promyshlennosti tsvetnoy metallurgii.

BOBROV, B.S.; VANYUSHIN, S.P.; NESTERENKO, A.G.

Needle for skin puncture. Lab. delo 8 no.3:57-58 Mr '62.
(MIRA 15:5)

1. Nauchno-issledovatel'skiy institut eksperimental'noy khirurgicheskoy apparatury i instrumentov (dir. - M.G.Anan'yev) Ministerstva zdravookhraneniya SSSR, Moskva.
(MEDICAL INSTRUMENTS AND APPARATUS)

Technical agate in U. S. S. R. and problems for the investigation of its deposits. S. S. Vanyushin. *Mém. soc. russe minéral.* 67, No. 1, 141-53(1938); *Khim. Referat. Zhur.* 2, No. 4, 37-8(1939). — The tech. agate deposits in Georgia, Armenia and Azerbaijan are described. Of the agates of the Caucasus regions, those occurring as nuggets in porphyrites and andesites are of the highest quality. Agates found in veins in the same deposits are of poorer quality. Tube-shaped agates (in the Pomach and Akhaltsykh deposits) are usually 0.5-50 cm. in diam.

Some tubes are completely filled with agate while others are hollow with a smooth inner surface or a surface covered with quartz crystals. Agates in the form of specks are very numerous. Agate in sedimentary deposits gives no suitable tech. raw material. The microstructure of the tech. agates is described very briefly.   W. R. Henn